Bartholomew's. No hypothesised factors could explain these differences, which persisted after complex corrections for medical school intake. Six medical schools explicitly included nutrition in their curricula. A cross tabulation between these schools and the rest and between a higher than average and lower than average production of nutritionally aware graduates gave $\chi^2=0{\cdot}01$, df=1; NS. Pearson's correlation coefficient between teaching time and number of contributors was $-0{\cdot}1$. These data suggest a likely negative relation between these variables.

The number of medically qualified contributors to the *Good Food Guide* varied with date of graduation and was 31 for 1941-50, 27 for 1951-60, 24 for 1961-70, 17 for 1971-80, and seven for 1980-7 (one unknown). A one sample test showed that the contributors were significantly unevenly distributed by graduation date ($\chi^2=16{\cdot}83$, df=4; $p<0{\cdot}01$). Inspection showed that more older graduates than younger ones were nutritionally aware, despite having had little, if any, teaching in nutrition.

Discussion

It is clear from these findings that since 1940 nutritional awareness has decreased rather than increased among medical graduates and that the relation between undergraduate teaching and nutritional awareness is non-existent. The implication for undergraduate teaching of nutrition is quite clear: it should be abandoned and the time devoted to subjects more central to medical practice.

Of course, these data, though in part highly significant, are the result of one numerically oriented study. There are also problems with the temporal congruence of independent and dependent variables. Therefore other quasi-ethnodescriptive approaches may offer an insight into the problems of method and findings. Thus a submission for funding of a major participant evaluation study is being prepared. The doubtless much richer resultant data will be reported later.

But there are wider implications arising from this investigation. The General Medical Council and others should consider whether other seemingly worthy subjects may have a similarly contradictory impact. The place of subjects recently recommended for inclusion in the curriculum should be carefully examined—for example, communication skills, behavioural science, biochemistry, and physiology. The results of such research could have a far reaching effect on undergraduate medical education.

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Arctic Willy

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Frostbite usually affects fingers, toes, and exposed extremities in subzero temperatures, other parts of the body being affected in fewer than 2% of cases.[1,2] Freezing cold injury may be divided into frostbite, in which trophic changes occur, and frostnip, in which the symptoms and signs of freezing resolve within an hour after rewarming.[3] Reports of genital cold injury, especially affecting drivers in unheated lorries and mountaineers wearing tight trousers, appeared in Germany and Russia after the first and second world wars,[2] but since then such injury has not been widely recognised. This report draws attention to the features of this singular disorder.

Patients, observations, and results

All patients were military personnel who presented between January and February 220 km north of the Arctic Circle at latitude 69° 20′ N in Norway. The table summarises the principal symptoms, circumcision state, activity, and windchill factor at the time of injury. The windchill factor allows for the effect of moving air on heat loss from skin[4] and in this report took into account wind velocity as well as running or skiing speed. The clothing worn included underpants, polypropylene longjohns, and track suit bottoms in all men except one, who wore a ski suit instead of track suit bottoms. Recovery was complete in all patients, although symptoms recurred during subsequent exposure in one patient (case 5), in whom balanitis was initially misdiagnosed.

Details of cold injury to genitals in seven cases during outdoor activity in Norway

Case No	Age (years)	Circumcision state	Activity	Windchill factor (°C)	Type of injury	Features
1	27	Uncircumcised	Running	−34	Frostbite	Intense dysuria (3 h), preputial numbness, erythema, oedema (48 h)
2	38	Uncircumcised	Running	−34	Frostnip	Dysuria, preputial numbness (1 h)
3	30	Uncircumcised	Running	−42	Frostbite	Preputial numbness (only 30 min)
4	23	Uncircumcised	Running	−33	Frostbite	Dysuria (1 h), preputial erythema and oedema, then radial fissures and phimosis (three weeks)
5	25	Uncircumcised	Running	−33	Frostbite	Dysuria (48 h), preputial numbness, erythema and oedema of glans, and cobbled appearance at five weeks. Recurrence of symptoms on subsequent exposure
6	26	Circumcised	Skiing	−54	Frostnip	Mild dysuria, numbness then intense pain in glans; simultaneous frostbitten ears
7	22	Uncircumcised	Skiing	−48	Frostnip	Intense dysuria, preputial numbness (1 h)

S ASHINGTON

Cold parts in a cold climate

Comment

Running or skiing in extreme conditions was a recreational activity for these men. Natural reticence may have led to underreporting of other cases. Injury reflected a failure to appreciate the risks as well as inadequate protective clothing. Dysuria was a prominent early symptom, possibly owing to rapid rewarming of the urethra during micturition. Persistent dysuria may have been caused by damage to the urothelium from urine freezing in the distal urethra. Cold injury might be expected to have been more common among the circumcised men, but the prepuce is itself susceptible despite offering protection to the glans. Natural concern about functional impairment was expressed by all patients so the uniformly favourable outcome was reassuring. The standard initial treatment of frostbite entails rewarming frostbitten parts in a bowl of warm water at 42°C,[3 5] but this would clearly be impracticable in these circumstances; a shower or sauna is an alternative, but the excessive heat of a sauna is potentially detrimental. Subsequent treatment at best deals with the symptoms so prevention by loose fitting windproof trousers is the key.

We thank Major E Southby-Tailyour for his help and encouragement.

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Cricketing casualties and sporting siblings

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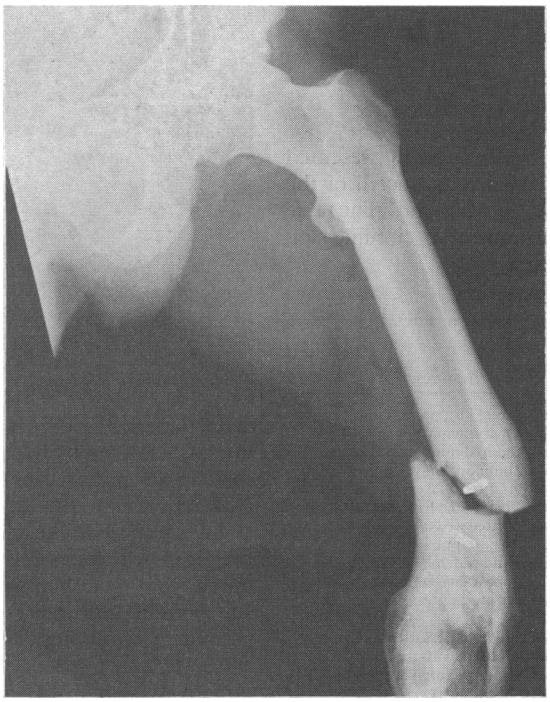
Among the injuries most commonly sustained by cricketers are head injuries in fielders, back injuries in bowlers, and facial and head injuries in batsmen.[1 2] As England's batsmen prepare to face the awesome might of the West Indian pace attack the dangers pale into insignificance beside the hazards that befell two keen but unfortunate brothers warming up before a local Sunday league game in Middlesex last summer.

Case report

The two brothers had just begun their customary pre-match fielding practice with their team mates when brother 1 fell awkwardly twisting his right knee while running backwards to make a catch. His knee became locked in flexion and, as he was unable to take the weight on his leg, his team mates called for an ambulance. The start of the game was delayed. Meanwhile, brother 2, concerned about the quality of his medium pace bowling, decided to spend the additional time made available in practice. Unfortunately while running up to bowl he slipped and fell to the ground, an ominous crack emanating from his left thigh. Unable to stand, he elected to accompany his brother to hospital. Clinically, brother 1 had sustained an injury of the medial meniscus, and the following day a bucket handle tear was excised arthroscopically. The *x* ray of the left femur of brother 2 showed a transverse fracture of the middle third of the femur (figure). He had sustained a fracture 12 years previously in a road traffic accident that had been plated. Unfortunately when it came to removing the plate two screw heads were broken off (one of these can be seen overlying the femur in the lower part of the *x* ray film). The two screws were therefore left in place, and it can be seen that the fracture occurred at the level of the proximal screw. After removal of these two screws he was treated by open reduction and intramedullary nailing of his fracture.



Radiograph of left femur showing transverse fracture and pins from previous injury

Comment

Injuries among cricketers are not uncommon. Of most concern are the head and eye injuries sustained by batsmen that occur despite the use of protective head gear.[2] Direct blows from a cricket ball can also produce more unusual injuries such as a splenic rupture.[3] Knee injuries, particularly meniscal tears, are not uncommon among all sportsmen. Refracture of a long bone in which screws have been left is a well recognised problem as the resistance of long bones to torque stress is reduced by about half in such cases.[4]

Medical mishaps among sporting siblings are uncommon. The case of sudden death of two brothers with familial hypertrophic cardiomyopathy while playing basketball, as reported by Evans *et al*, is perhaps unique.[5] Although it is not uncommon to find siblings playing in the same team, it is most unusual and unfortunate for both to sustain injuries in the prematch warm up requiring urgent surgical treatment. If the difference between success and failure in sport may often be attributed to luck this report does not augur well for the resurgence of our national summer game.

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